ASG

Alert Systems Group

DELIVERING THE INDUSTRY’S FIRST EARTHQUAKE EARLY WARNINGS AND NATURAL DISASTER AUTOMATIONS

About Us

- Our research began in 2013 to meet particular needs of the USGS, Alert Systems Group was founded shortly thereafter

- Only Earthquake, Hurricane, Tornado, and Tsunami Early Warning and automations company in existence

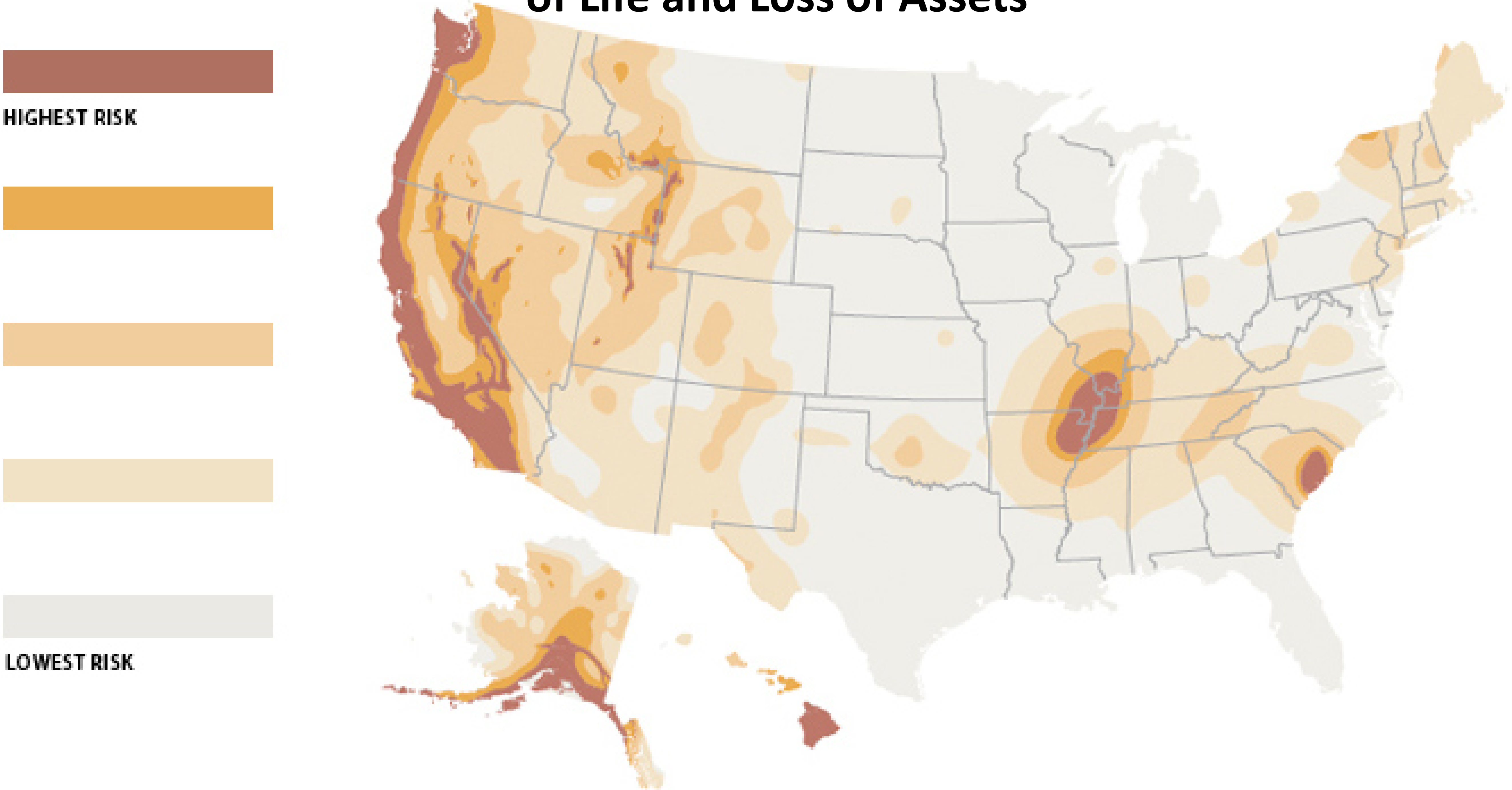
- Integrated Software and Hardware (… that plays nice with others)

- Covering 98% of the US population with THREE forms of redundancy

- Company Founder’s Background
    - **Michael**: Public Safety communications infrastructure, Mass notification systems, 911 dispatch systems, interoperability systems

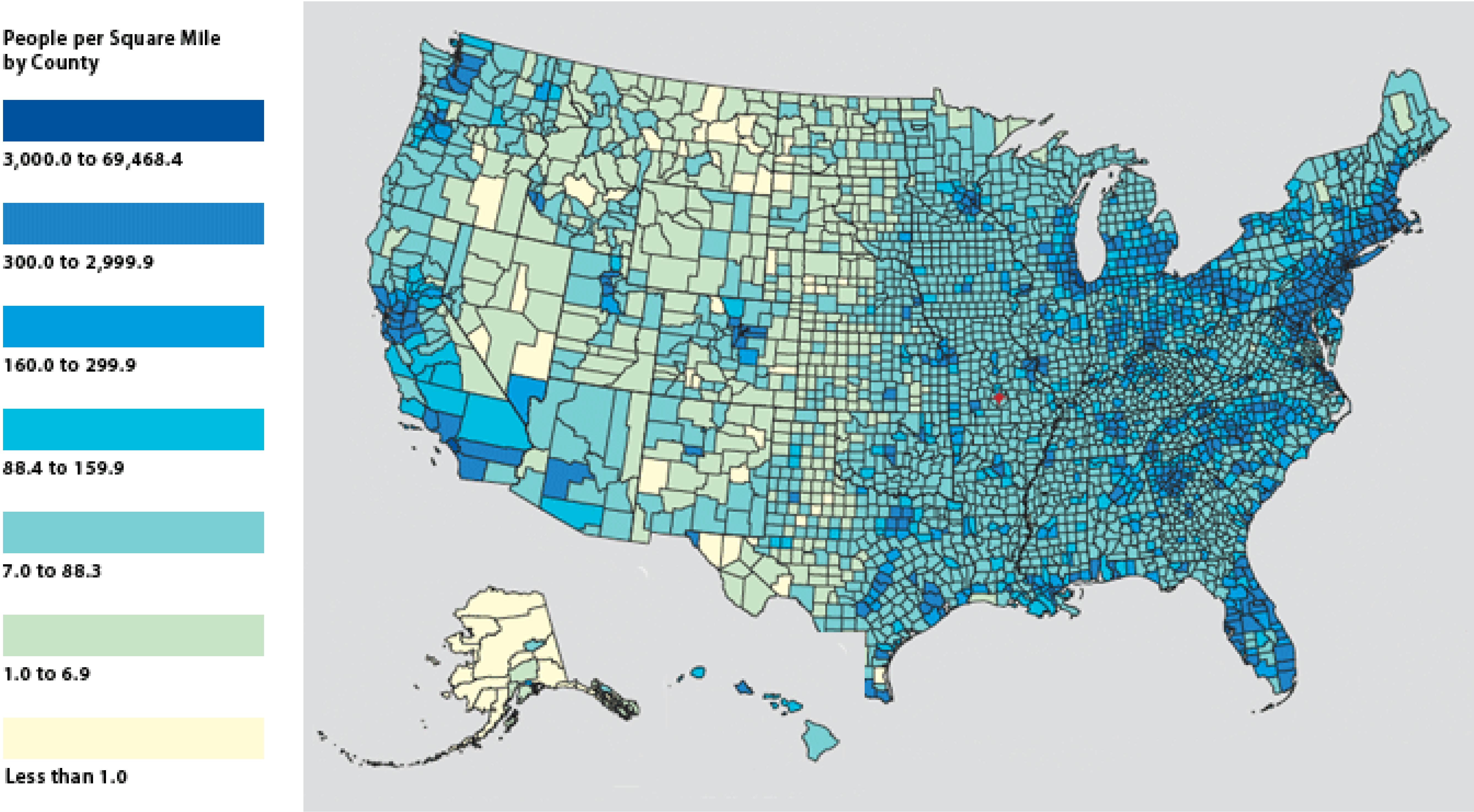
PROBLEM

EEW, Tornado, Hurricane, and Tsunami systems and automation hardware is still not a mandatory standard to ensure preventing Loss of Life and Loss of Assets

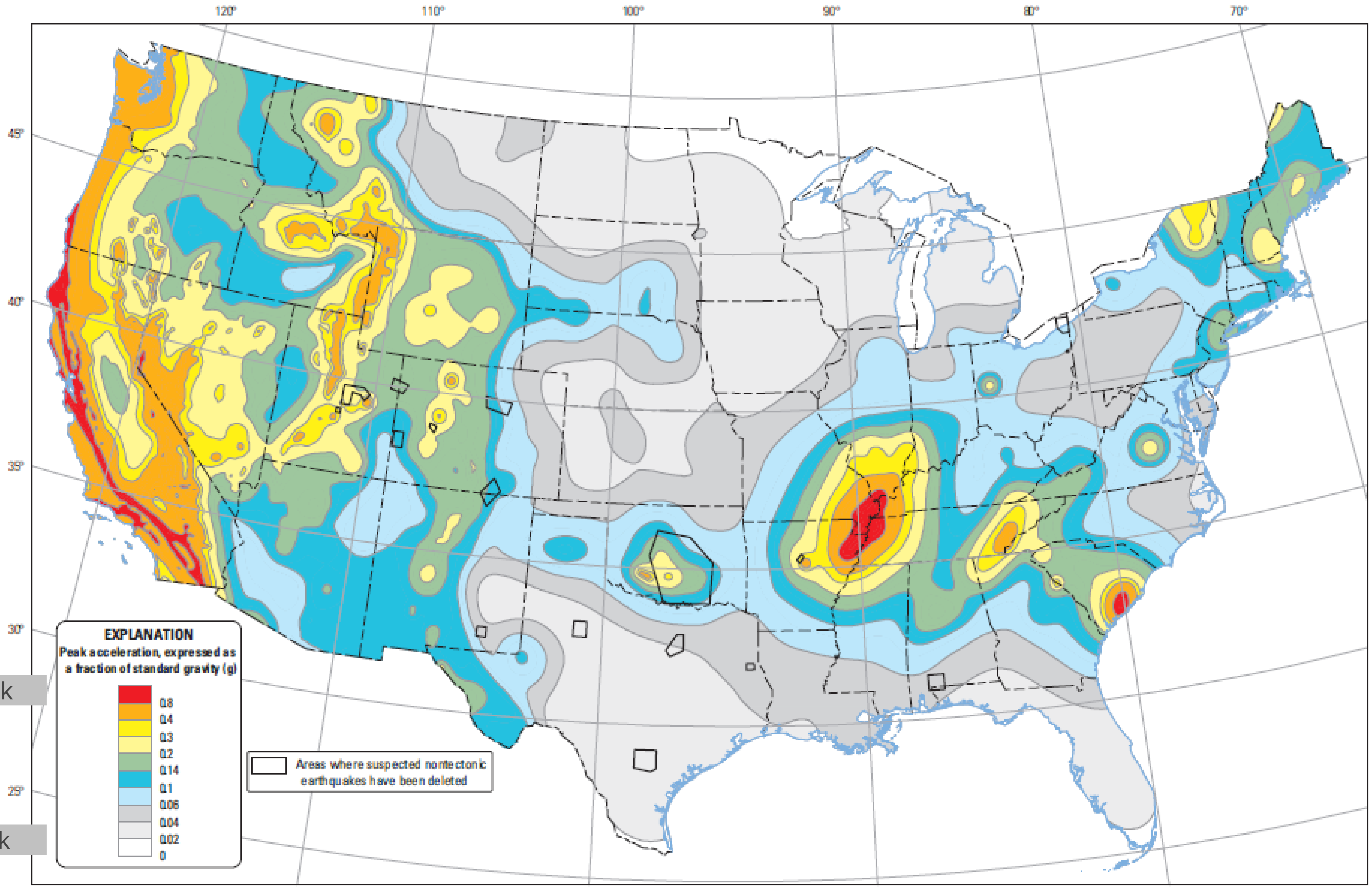


Are We Vulnerable?

US Density


People per Square Mile by County
3,000.0 to 69,468.4
300.0 to 2,999.9
160.0 to 299.9
88.4 to 159.9
7.0 to 88.3
1.0 to 6.9
Less than 1.0

Earthquakes

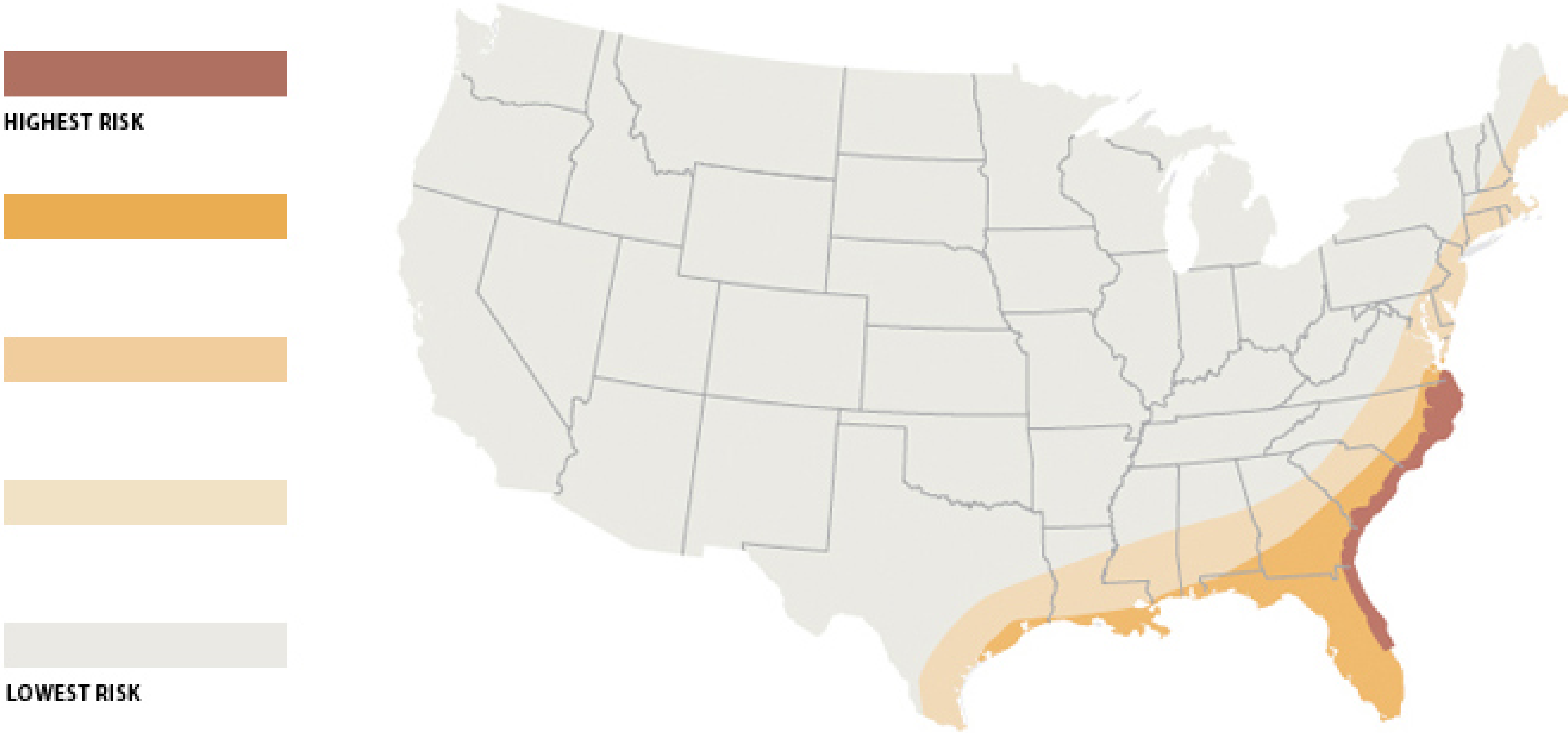

120°
110°
100°
90°
80°
70°
45°
40°
35°
30°
25°
EXPLANATION
Peak acceleration, expressed as a fraction of standard gravity (g)
0.8
0.4
0.3
0.2
0.14
0.1
0.06
0.04
0.02
0
Areas where suspected nontectonic earthquakes have been deleted

High Risk

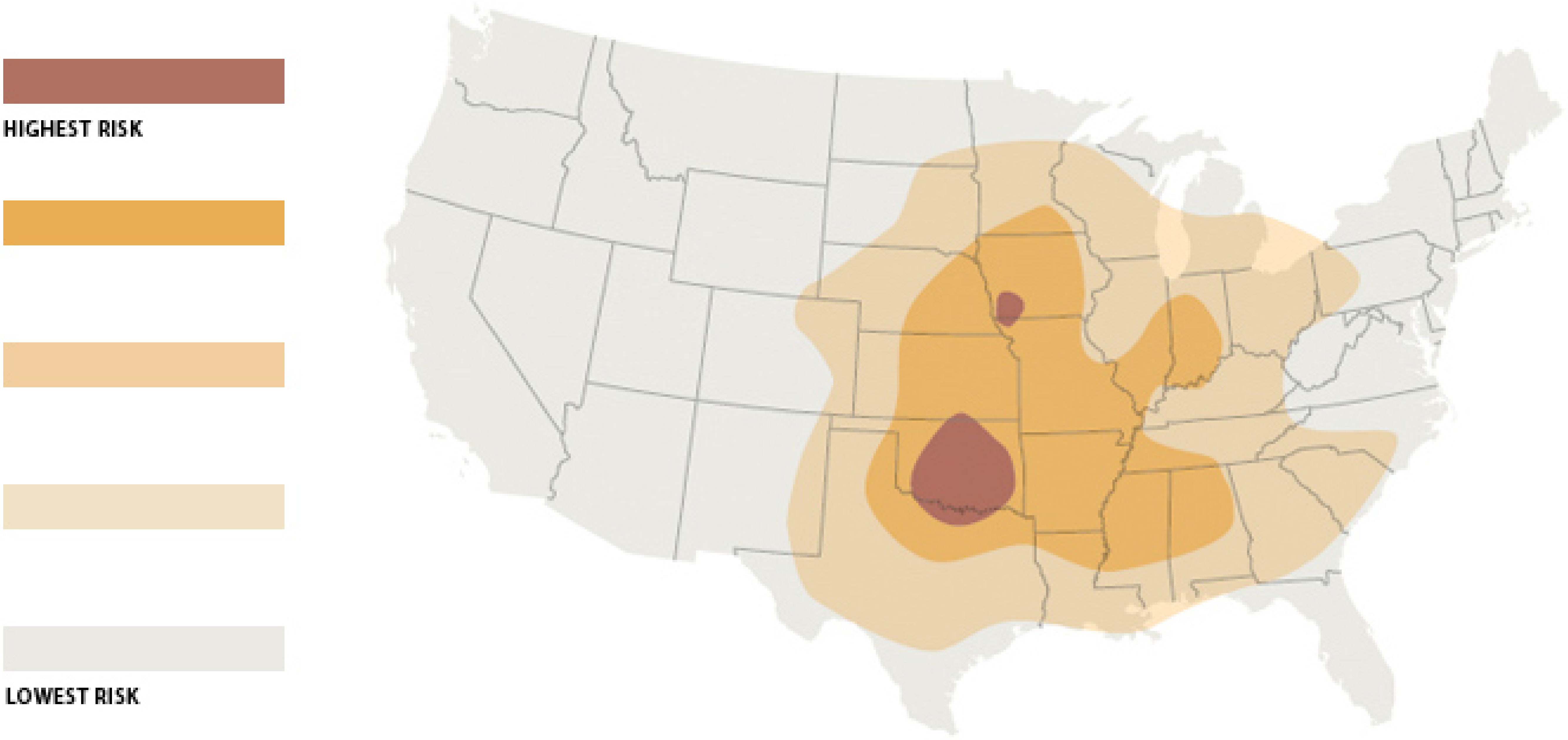
Low Risk

US Seismic Risk

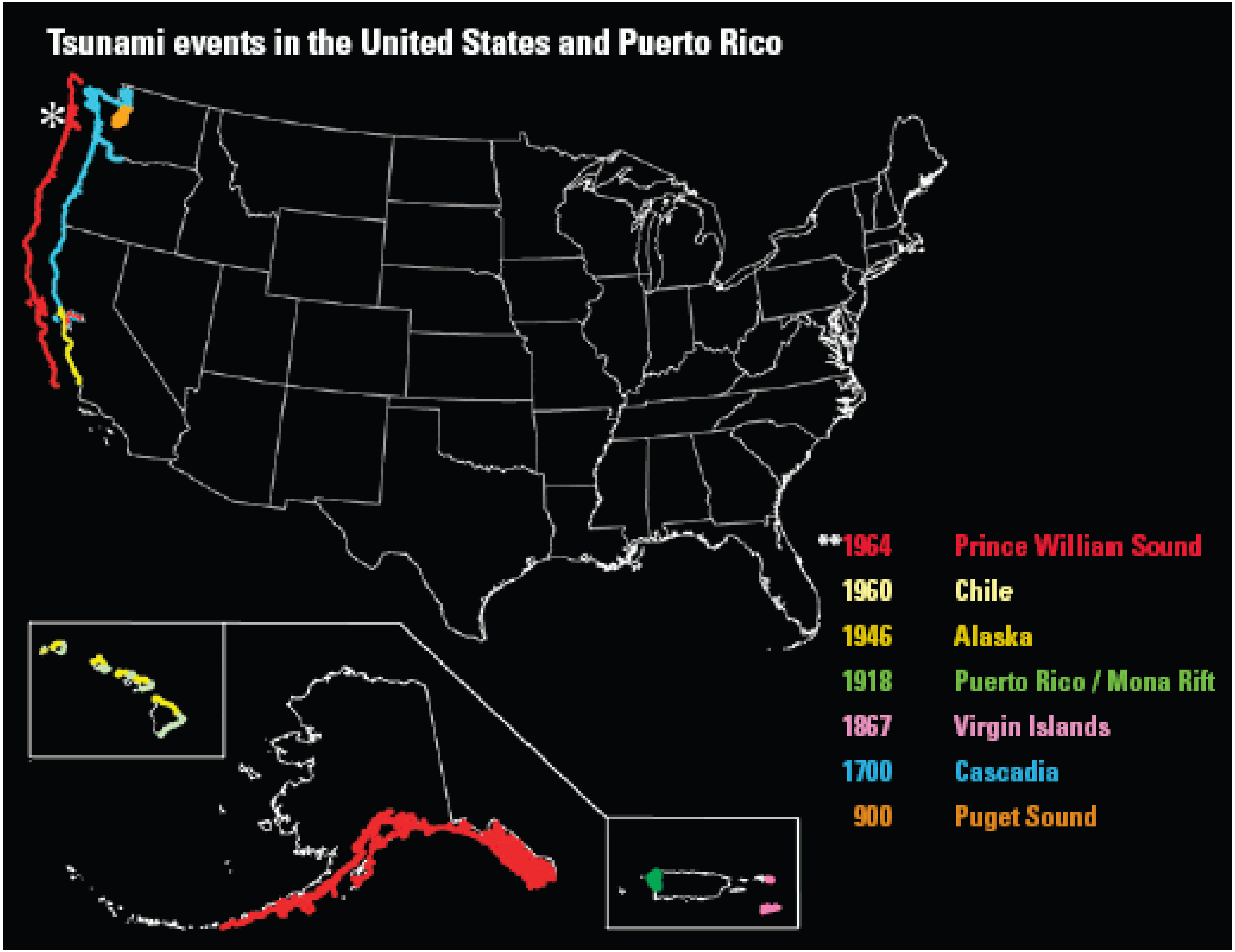
Hurricanes



Tornados



Tsunamis



Tsunami events in the United States and Puerto Rico

All Natural Disasters

🟨

EARTHQUAKES - MODERATE

🟫

EARTHQUAKES - HIGH

🟧

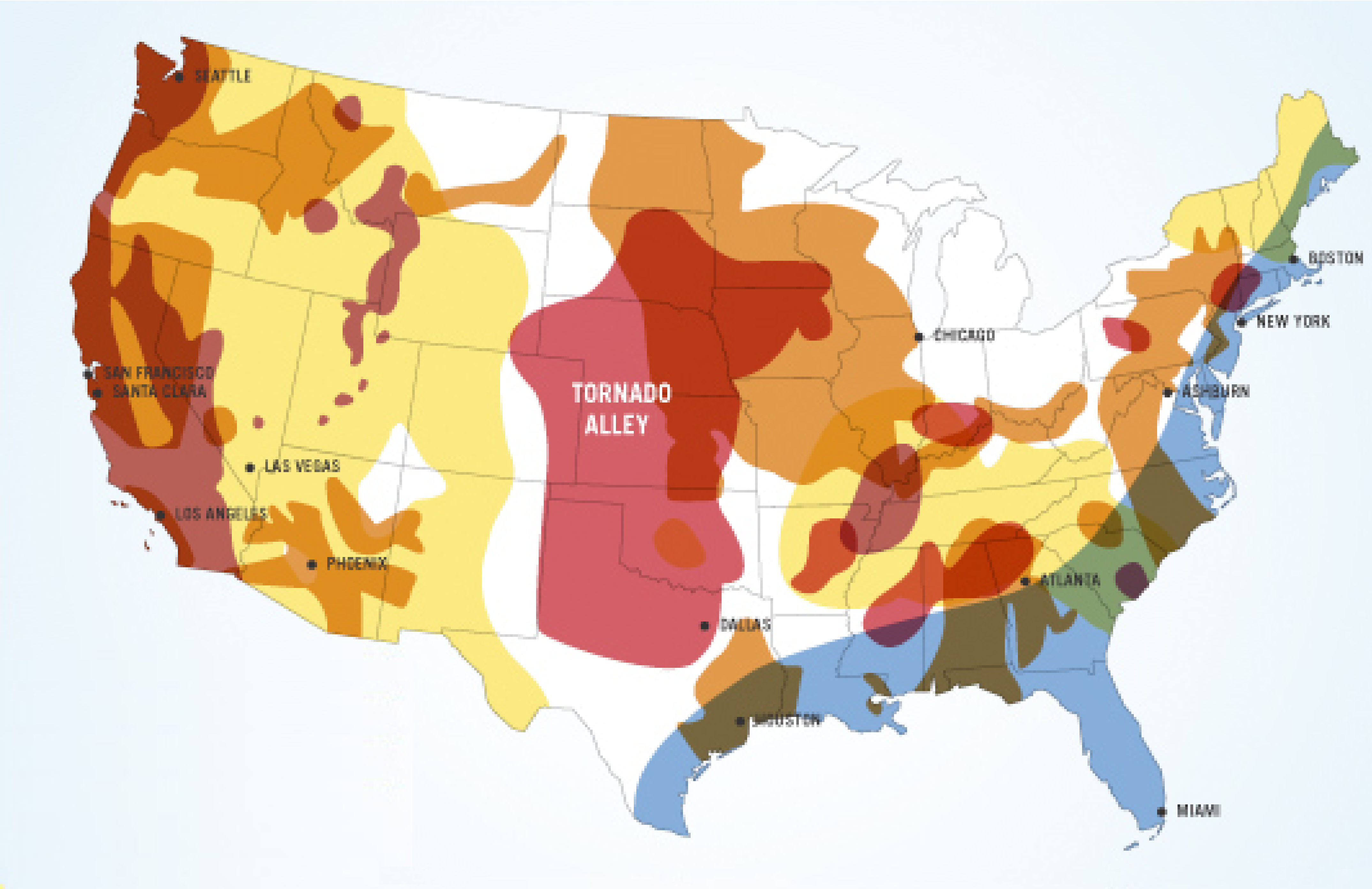
FLOODS

🟦

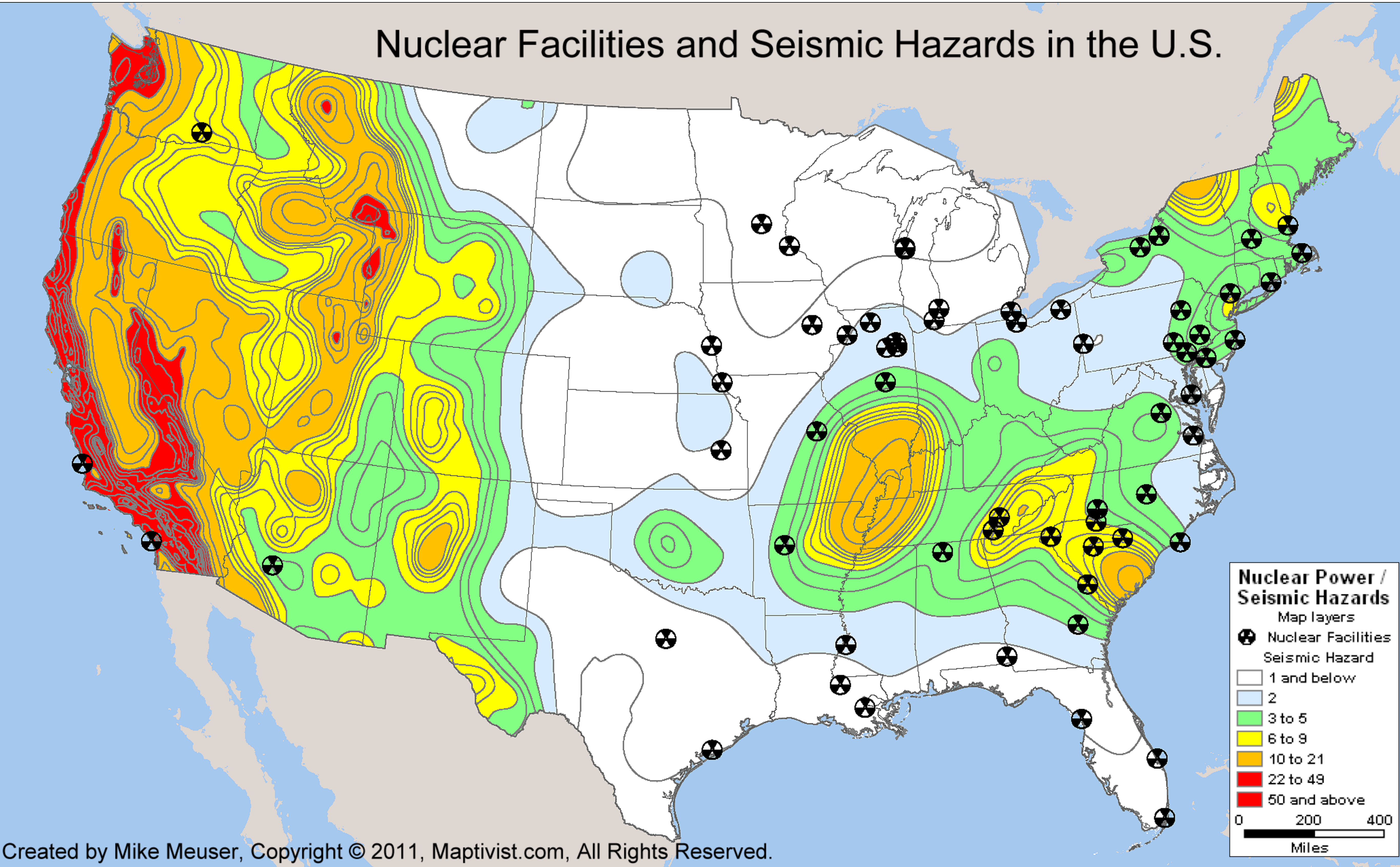
HURRICANES

🟥

TORNADOS



My Personal Favorite



Nuclear Facilities and Seismic Hazards in the U.S.

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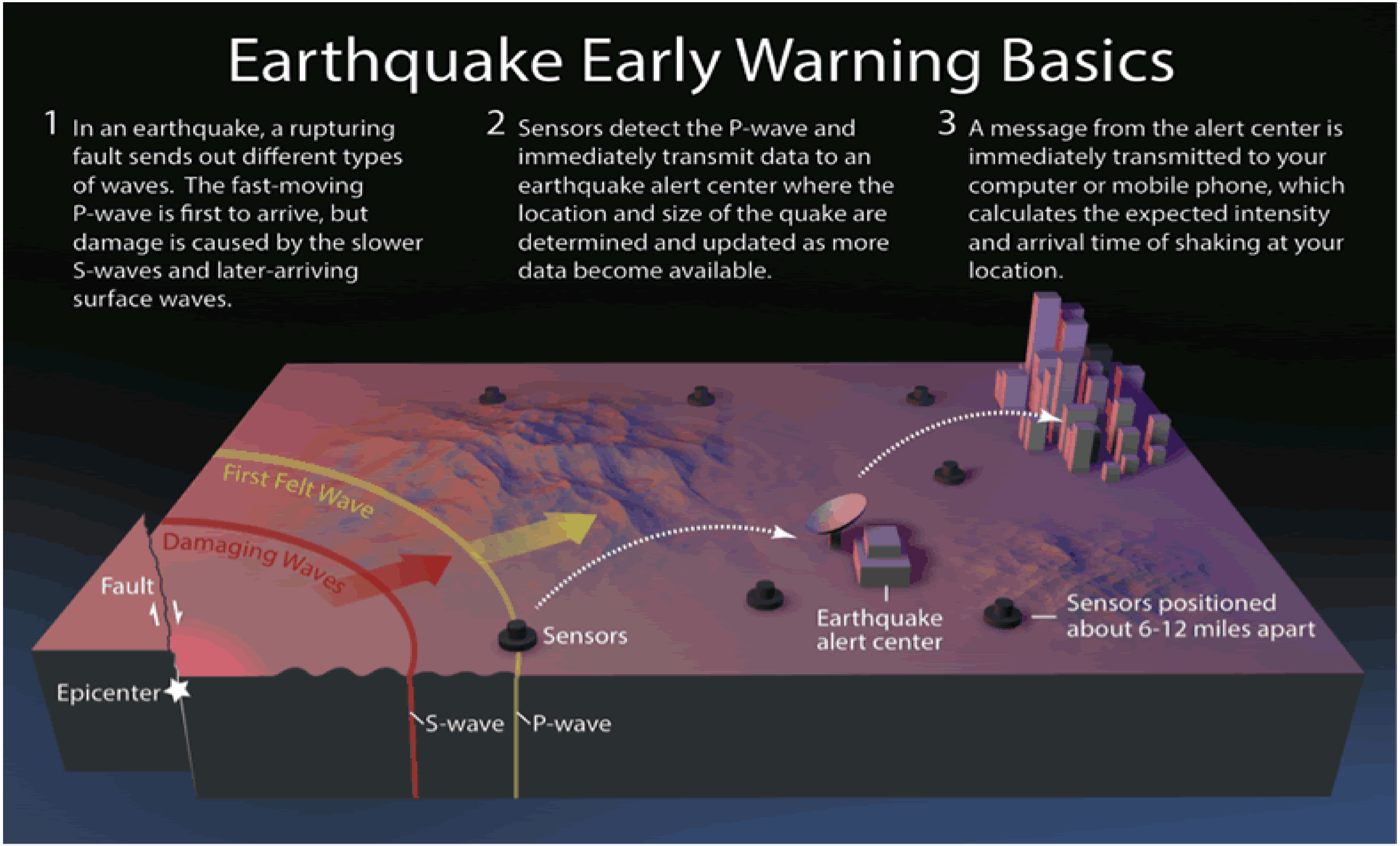
Earthquake Basics



Earthquake Early Warning Basics

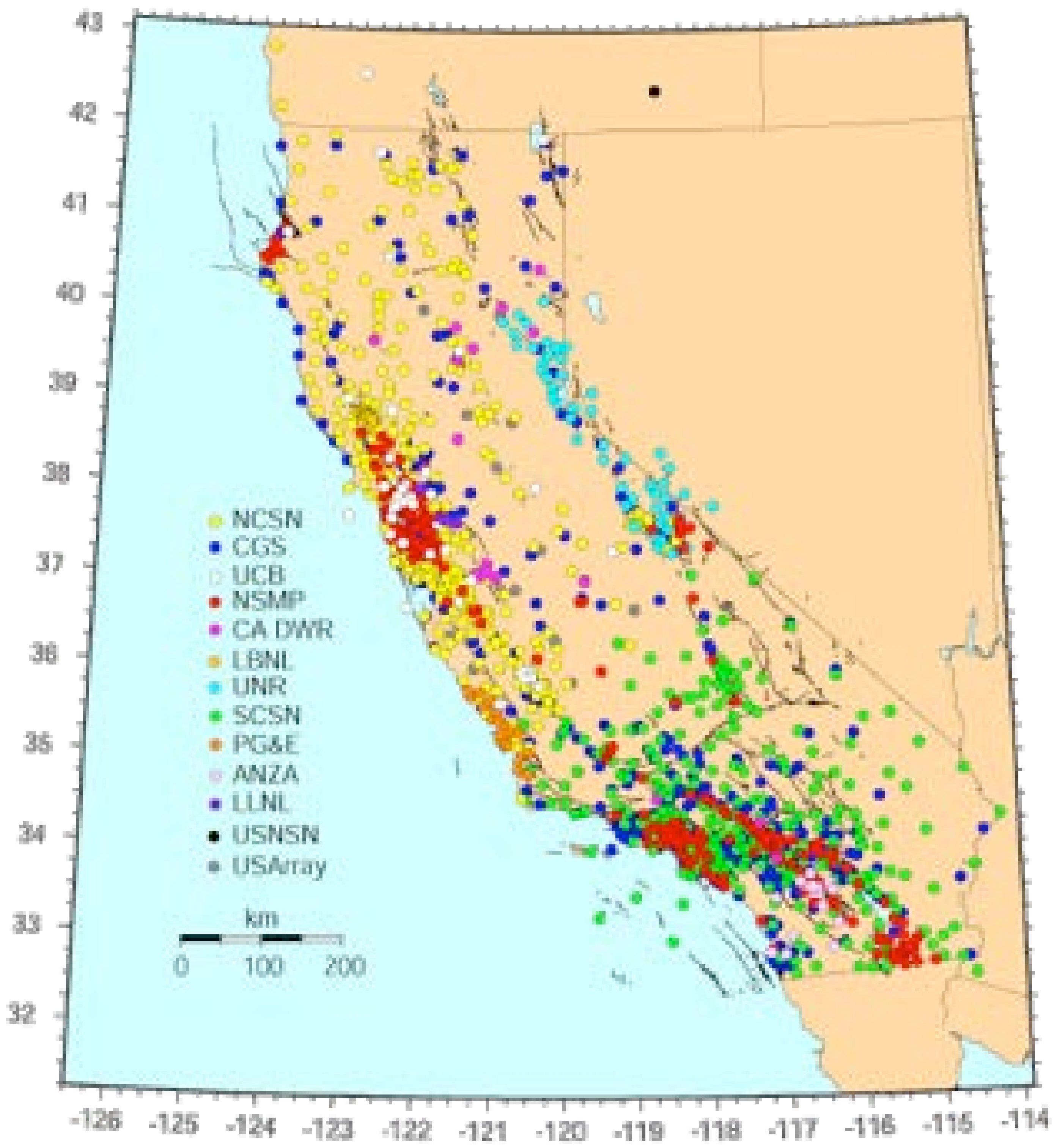
1 In an earthquake, a rupturing fault sends out different types of waves. The fast-moving P-wave is first to arrive, but damage is caused by the slower S-waves and later-arriving surface waves.

2 Sensors detect the P-wave and immediately transmit data to an earthquake alert center where the location and size of the quake are determined and updated as more data become available.

3 A message from the alert center is immediately transmitted to your computer or mobile phone, which calculates the expected intensity and arrival time of shaking at your location.

EARTHQUAKE SOLUTION

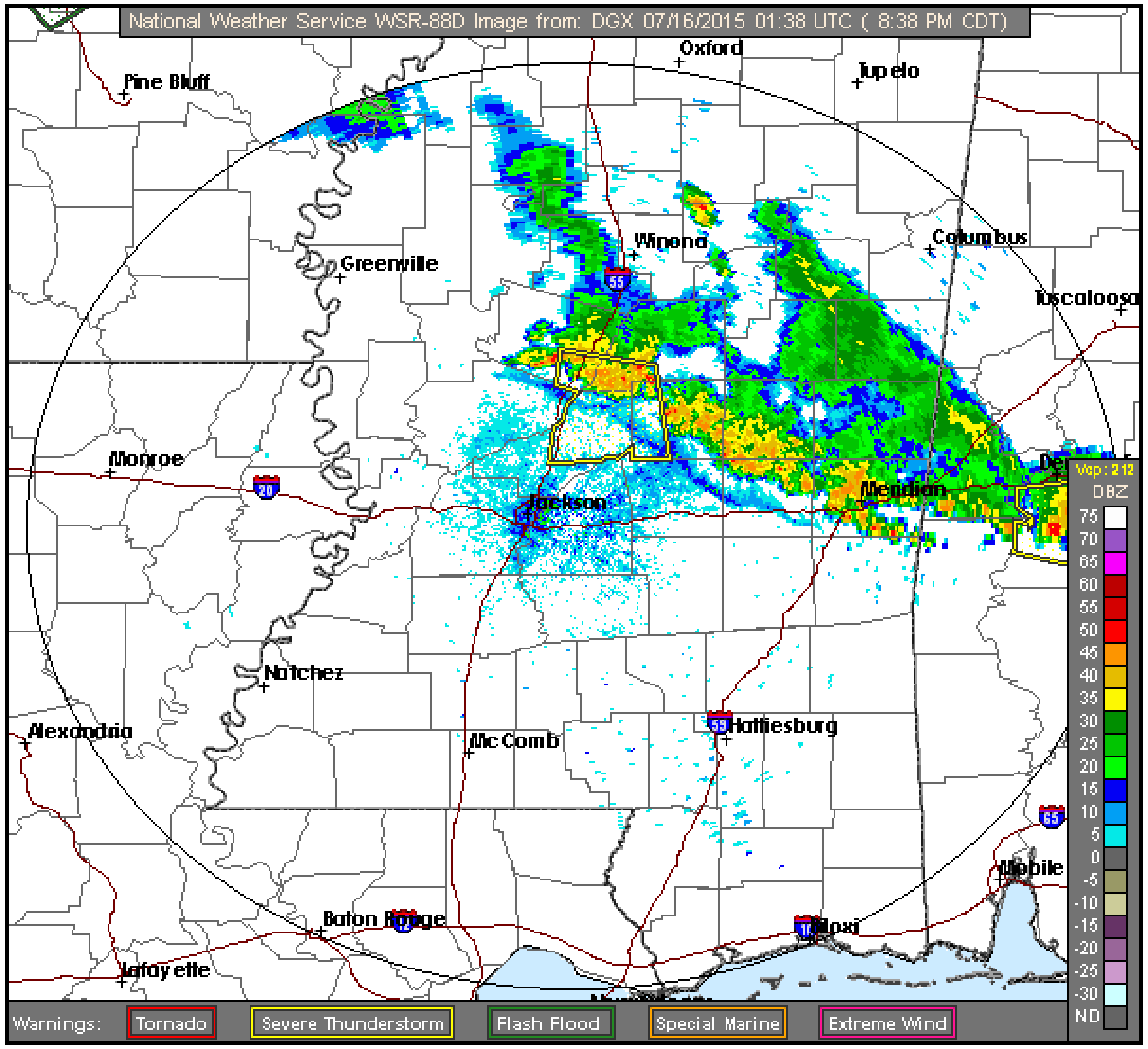
Alert Systems Group, through our Tech-Transfer partnership with the USGS have developed America’s first commercial distribution of Earthquake Early Warning alerts



Current California Sensor Network

NATURAL DISASTER SOLUTION

Alert Systems Group, through our partnership with NOAA, have developed a commercial and consumer distribution of Hurricane, Tornado, and Tsunami alerting and automation



NOAA

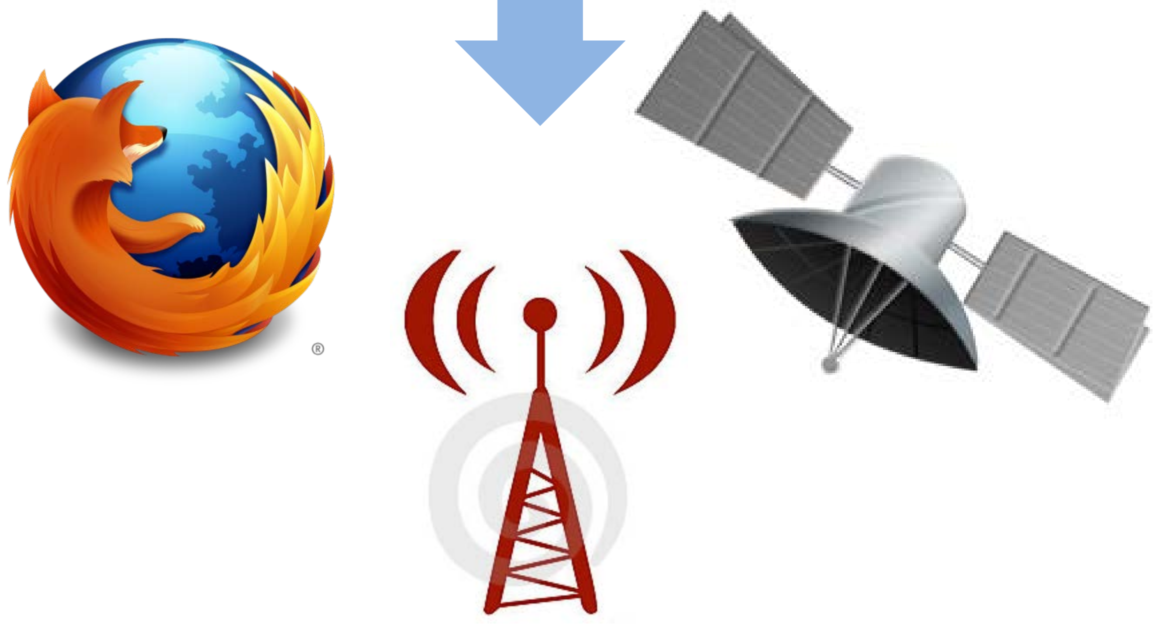
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

UNITED STATES DEPARTMENT OF COMMERCE

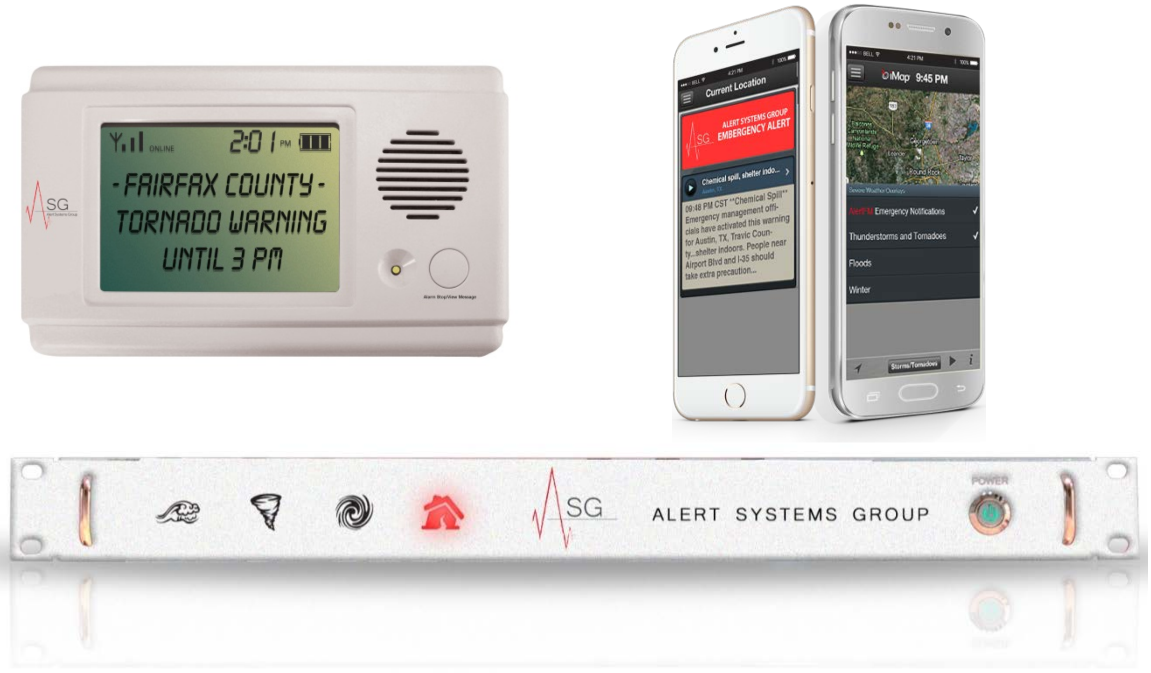
How It Works

Raw Seismic and Weather Data

ASG Alert Cloud Server Infrastructure

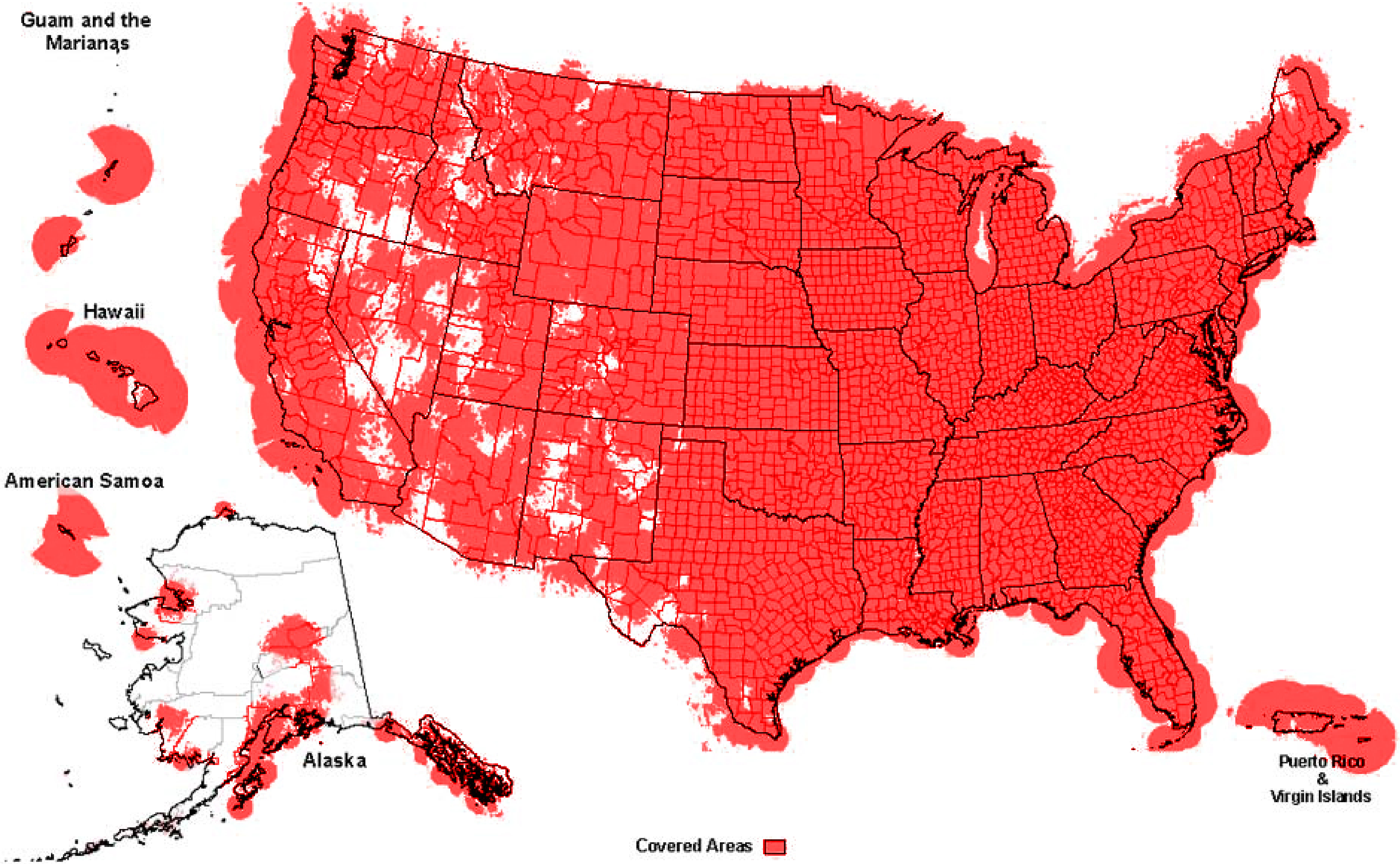


Internet, Radio, and Satellite



All ASG Hardware and Apps

ASG Coverage Map



Automate Response on ANY Mechanical Interface

- Doors, Windows, Gates
- Lights, Alarms, Sirens
- Back-up Generators
- Automatic Shut-offs
    - Valuable Machinery
    - Gas lines
    - Vulnerable water mains
    - Refineries
    - Reactors
- Stop elevators at the closest floor
- Slow and stop trains
- Slow and stop rides at predetermined locations

Automatic Natural Disaster Alerts Across All Communication Platforms

Any Radio Manufacturer

MOTOTRBO™ Connect Plus - IP Console
Trident Micro Systems ADCC and Avtec Scout

Direct Interface into any EOC Dispatch system currently used:

- Motorola
- Zetron
- Telex
- Avtec

Any POTS phone systems

Sprint PTT & Direct-Connect

Any VOIP phone system

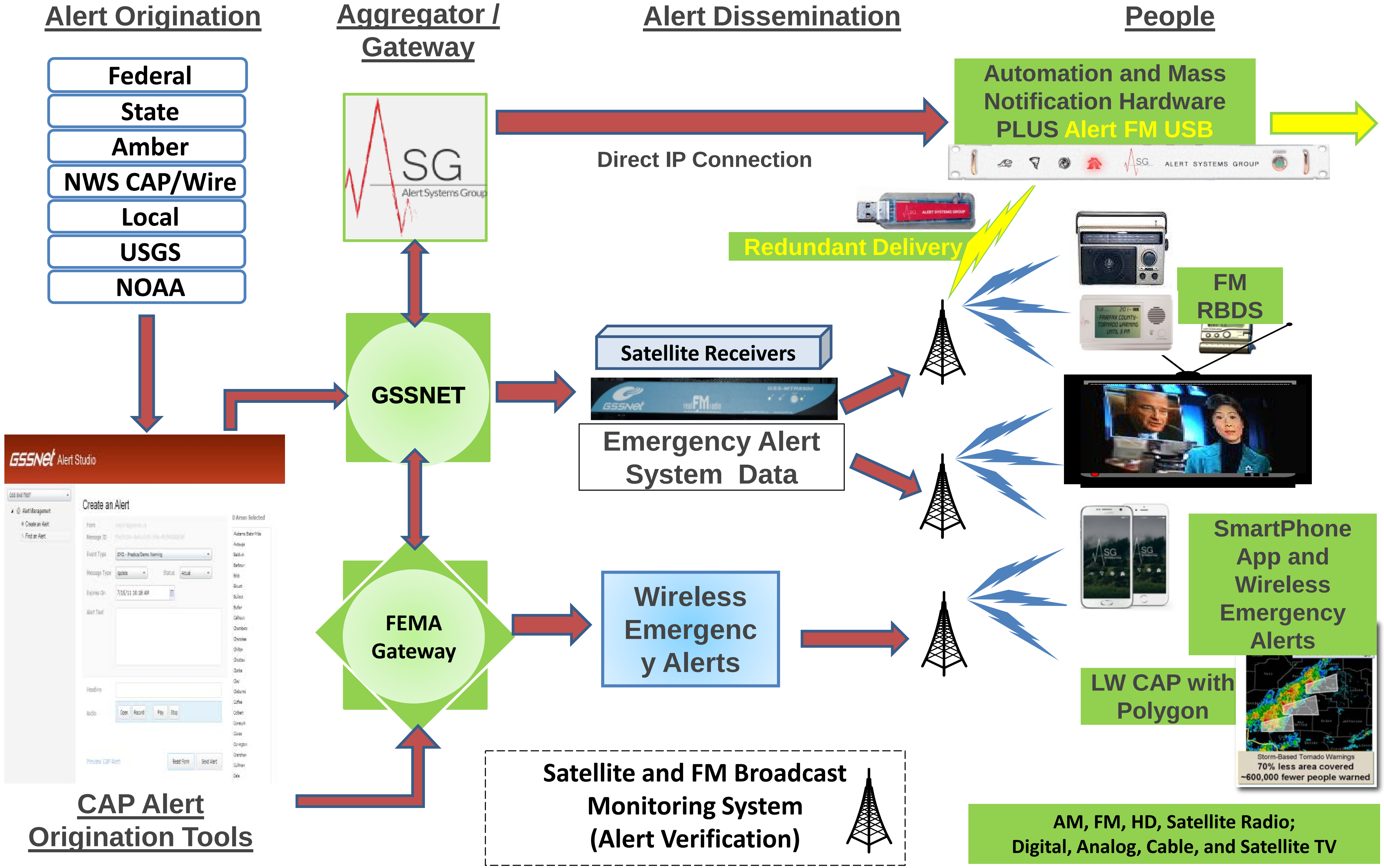
Automatically Alert and Automate Any Existing Mass Notification System

Sirens
Alarms
PA Systems

Federal Signal
Everbridge
CodeRed
CodeBlue
Adhoc
Coopers

Fire Station Alerting:
Westnet
Zetron
All Others

Alert Systems Group Rapid Alert System Architecture



Alert Origination

- Federal
- State
- Amber
- NWS CAP/Wire
- Local
- USGS
- NOAA

CAP Alert Origination Tools

Aggregator / Gateway

GSSNET

FEMA Gateway

Alert Dissemination

Direct IP Connection

Satellite Receivers

Emergency Alert System Data

Wireless Emergency Alerts

Redundant Delivery

Satellite and FM Broadcast Monitoring System (Alert Verification)

People

Automation and Mass Notification Hardware PLUS Alert FM USB

FM RBDS

SmartPhone App and Wireless Emergency Alerts

LW CAP with Polygon

AM, FM, HD, Satellite Radio;
Digital, Analog, Cable, and Satellite TV

ASG Automation and Mass Notification Hardware

Powered by AlertFM USB Reciever

MOTOTRBO™ Connect Plus - IP Console
Trident Micro Systems ADCC and Avtec Scout

1. Control and PTT any Radio Manufacturer
2. Any POTS phone system
3. Any VOIP phone system
4. Sprint PTT & Direct Connect
5. Direct Interface into any EOC Dispatch system currently used:
   - Motorola
   - Zetron
   - Telex
   - Avtec

1. Doors, Windows, Gates
2. Lights, Alarms, Sirens
3. Back-up Generators
4. Automatic Shut-offs
5. Valuable Machinery
6. Gas lines
7. Vulnerable water mains
8. Refineries
9. Reactors
10. Stop elevators at the closest floor
11. Slow and stop trains
12. Slow and stop rides at predetermined locations
13. **ANY MECHANICAL INTERFACE!!**

Why ASG?

3 reasons:

1. Only company in the US with access to raw earthquake data and all NOAA data (National Weather Service)

2. Only company in the US capable of controlling all Motorola, Kenwood, Icom, and other proprietary radio protocols

3. Only private company in the US capable of transmitting data over the EAS messaging system. We are CAP Compliant and FEMA Certified!

THEME PARK CASE STUDY

NBC / UNIVERSAL

Automated Early Warning Actions:

Phase 1: Completed

- Opening Fire Station Doors
- 2-way Radio Broadcast Warning
- Alert over PA system for Security
- Alert over PA system for Fire Station

Phase 2: Scheduled 2015/2016

- Ride Safety Shutdown
- Utility Shutoff
- Generators turned on
- Elevators stopped at nearest floor
- Dispatch Integration - For Evacuation
- Active Shooter automation around park

NBC UNIVERSAL

UNIVERSAL STUDIOS HOLLYWOOD

PUBLIC SAFETY CASE STUDY

LA COUNTY FIRE (125 Stations)

Automated Early Warning Actions:

- Open Fire Station Doors
- Alert over Motorola Trunking Radio System
- Warning over Fire Station PA system
- Integration in Dispatch Consoles (Motorola)
- CAD Integration (Zetron)
- Turn on Back-up generators at local offices
- Provide centralized analytics of all building systems (generators, doors, etc) to EOC or mobile operations center to manually turn on/off as needed after natural disaster automation takes place
- Send message via broadcast stations and Radio Data System to all public safety cell phones, ASG wall receivers, and ASG portable receivers with instructions

PUBLIC TRANSIT CASE STUDY

Los Angeles Metro Transit Authority (184 Locations)

Automated Early Warning Actions:

- Recall Elevators
- Start Back-up generators
- Direct integration into AVTEC Dispatch
- Direct integration into Icom IDAS Radio system for Rail and Kenwood NexEdge system for Bus
- Alert over SCADA system to monitors at train stations alerting civilians with instructions (evacuate, duck/cover/hold, seek shelter, etc)
- Integrate with LexRay mobile operations platform to monitor all 184 in-building systems from a tablet if EOC needs to be evacuated
- Send Alerts to portable ASG receivers via Emergency FM frequencies if Cell Phone network and Internet go down

SCHOOL DISTRICT CASE STUDY

Los Angeles Unified School District (2500+ schools)

Automated Weather Early Warning Actions:

- Alert over PA system to classrooms instructing students to duck, cover, hold or to evacuate
- Alert school and district staff via 2-way radio system of incoming natural disaster
- Recall Elevators
- Start Back-up generators
- Send Alerts to portable ASG receivers via Emergency FM frequencies if Cell Phone network and Internet go down

Active Shooter Situation: all of the above plus …

- Provide Active Shooter pull alarms around the school capable of automating a lockdown of all vital entryways and exits (can be remotely triggered)
- Alert local police, fire, and EMS via phone and 2-way radio emergency alert
- Any other automated features within the district’s emergency plans

UTILITY AGENCY CASE STUDY

Metropolitan Water District

Automated Weather Early Warning Actions:

- Integrate into SCADA system
- Allow for existing dam sensors to trigger automation of system
- Automate IPAWS messages to civilians in possible affected flood regions
- Start Back-up generators
- Direct integration into dispatch consoles
- Direct integration into Radio system to alert all staff across all regions
- Shut down vulnerable water mains
- Alert local police, fire, EMS, and utility agencies via radio systems
- Allow for Staff to manually initiate emergency protocols

Vertical Markets

- Public Safety – Police, Fire, EMS
- Education – Schools, Colleges
- Utilities – Regional and National agencies
- Transportation – Public and Private rail, ground, and air transportation
- Hospitality – Hotels, Resorts, Casinos
- Enterprise/Industrial – Warehousing, Pharmaceutical, Financial
- Healthcare – Hospitals, Clinics, Medical Facilities
- Federal – USDA, DOI, Homeland Security
- Military – Department of Defense

PARTNERS

Core Product

USGS - Raw data access and research partner. Overseeing Authority

Caltech - Algorithms and research support

NOAA – National Weather Alerts

Global Security Systems – Transport mechanisms for all broadcast distribution

MEDIA COVERAGE

Alert Systems Group has been featured on countless TV networks and leading publications

Los Angeles Times

CBS NEWS

FOX NEWS Channel

The New York Times

NBC NEWS

BBC WORLD NEWS

TechCrunch

GIZMODO

CW COMPUTERWORLD

Summary

Our solutions work with any new or existing systems

- Communications Systems
- Alerting Systems
- Automation of everything

ALL DONE WITHIN SECONDS FROM WHEN AN EARTHQUAKE OR ANY OTHER NATURAL DISASTER IS DETECTED!!

Final Thought

It is not recommended to buy technology, but buy technology that fits your plan.

- Operational Plan
- Communications Plan
- Frequency plan
- Disaster Plan
- Emergency Plan
- Crisis Plan

ASG has purposely created frequency agnostic and radio agnostic hardware so we can customize to work around any plan you choose!

Questions

Alert Systems Group